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OMRON

SUBMINIATURE

Basic Switch

SS

Subminiature Basic Switch

- Economical, subminiature basic switch offers long service life (30 million operations minimum)
- All models are free from overtravel restrictions, permit easy setting
- Wide switching capacity range from microvoltage/current loads (1 mA at 5 VDC to high-capacity loads 10.1 A at 250 VAC)
- Standard operating force, low force or super-low force models available

Ordering Information

Pin plunger | Hinge lever | Simulated roller hinge lever | Formed hinge lever | Hinged roller lever

■ STANDARD TYPE

Microvoltage/microcurrent load 0.1 A max. (Bifurcated crossbar contacts)

Actuator	Contact OF	Part Number				
		PCB Terminal			Soldered Terminal	Tab (#110) Terminal
		Straight Vertical	Parallel to Left	Parallel to Right		
Pin plunger	25 g	**SS-01-ED**	**–**	**–**	**SS-01-E**	**SS-01-ET**
	50 g	**SS-01-FD**	**–**	**–**	**SS-01-F**	**SS-01-FT**
	150 g	**SS-01D**	**SS-01D1**	**SS-01D2**	**SS-01**	**SS-01T**
Hinge lever	8 g	**SS-01GL-ED**	**–**	**–**	**SS-01GL-E**	**SS-01GL-ET**
	16 g	**SS-01GL-FD**	**–**	**–**	**SS-01GL-F**	**SS-01GL-FT**
	50 g	**SS-01GLD**	**SS-01GLD1**	**SS-01GLD2**	**SS-01GL**	**SS-01GLT**
Simulated roller hinge lever	8 g	**SS-01GL13-ED**	**–**	**–**	**SS-01GL13-E**	**SS-01GL13-ET**
	16 g	**SS-01GL13-FD**	**–**	**–**	**SS-01GL13-F**	**SS-01GL13-FT**
	50 g	**SS-01GL13D**	**–**	**–**	**SS-01GL13**	**SS-01GL13T**
Formed hinge lever	8 g	**–**	**–**	**–**	**SS-01GL14-E**	**SS-01GL14-ET**
	16 g	**SS-01GL14-FD**	**–**	**–**	**SS-01GL14-F**	**–**
	50 g	**SS-01GL14D**	**–**	**–**	**SS-01GL14**	**SS-01GL14T**
Hinged roller lever	8 g	**SS-01GL2-ED**	**–**	**–**	**SS-01GL2-E**	**SS-01GL2-ET**
	16 g	**SS-01GL2-FD**	**–**	**–**	**SS-01GL2-F**	**SS-01GL2-FT**
	50 g	**SS-01GL2D**	**–**	**–**	**SS-01GL2**	**SS-01GL2T**

General-purpose 5 A max. (Standard rivet contacts)

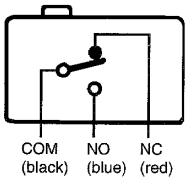
Actuator	Contact OF	Part Number				
		PCB Terminal			Soldered Terminal	Tab (#110) Terminal
		Straight Vertical	Parallel to Left	Parallel to Right		
Pin plunger	50 g	**SS-5-FD**	**SS-5-FD1**	**SS-5-FD2**	**SS-5-F**	**SS-5-FT**
	150 g	**SS-5D**	**SS-5D1**	**SS-5D2**	**SS-5**	**SS-5T**
Hinge lever	16 g	**SS-5GL-FD**	**SS-5GL-FD1**	**SS-5GL-FD2**	**SS-5GL-F**	**SS-5GL-FT**
	50 g	**SS-5GLD**	**SS-5GLD1**	**SS-5GLD2**	**SS-5GL**	**SS-5GLT**
Simulated roller hinge lever	16 g	**SS-5GL13-FD**	**–**	**SS-5GL13-FD2**	**SS-5GL13-F**	**SS-5GL13-FT**
	50 g	**SS-5GL13D**	**SS-5GL13D1**	**SS-5GL13D2**	**SS-5GL13**	**SS-5GL13T**
Formed hinge lever	16 g	**SS-5GL14-FD**	**SS-5GL14-FD1**	**–**	**SS-5GL14-F**	**SS-5GL14-FT**
	50 g	**SS-5GL14D**	**SS-5GL14D1**	**SS-5GL14D2**	**SS-5GL14**	**SS-5GL14T**
Hinged roller lever	16 g	**SS-5GL2-FD**	**SS-5GL2-FD1**	**SS-5GL2-FD2**	**SS-5GL2-F**	**SS-5GL2-FT**
	50 g	**SS-5GL2D**	**SS-5GL2D1**	**SS-5GL2D2**	**SS-5GL2**	**SS-5GL2T**

General-purpose 10.1 A max. (Standard rivet contacts)

Actuator	Contact OF	Part Number				
		PCB Terminal			Soldered Terminal	Tab (#110) Terminal
		Straight Vertical	Parallel to Left	Parallel to Right		
Pin plunger	150 g	**SS-10D**	**–**	**–**	**SS-10**	**SS-10T**
Hinge lever	50 g	**SS-10GLD**	**–**	**–**	**SS-10GL**	**SS-10GLT**
Simulated roller hinge lever	50 g	**SS-10GL13D**	**–**	**–**	**SS-10GL13**	**SS-10GL13T**
Formed hinge lever	50 g	**SS-10GL14D**	**–**	**–**	**SS-10GL14**	**SS-10GL14T**
Hinged roller lever	50 g	**SS-10GL2D**	**–**	**–**	**SS-10GL2**	**SS-10GL2T**

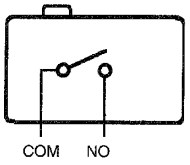
■ CONTACT FORM

SPDT
(common throughout the series)

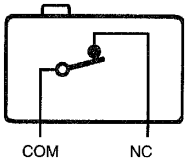


Sealed lead wire terminal models have color-coded leads.

SPST-NO*
(standard models rated at 0.1 to 0.5 A)



SPST-NC*
(standard models rated at 0.1 to 5 A)



* The normally open (SPST-NO) and normally closed (SPST-NC) types are not listed in the Ordering Information tables. Directly consult OMRON.

Specifications

Microvoltage/microcurrent load type

Contact form	General purpose/resistive load	
	Bifurcated crossbar contacts	
	NC	NO
125 VAC	0.1 A	0.1 A
30 VDC	0.1 A	0.1 A
Inrush current	1 A max.	1 A max.

Standard type general purpose

	Rivet contacts									
	Resistive load				Lamp load		Inductive load		Motor load	
Switch series:	SS-5		SS-10		SS-5 and SS-10		SS-5 and SS-10		SS-5 and SS-10	
Contact form	NC	NO	NC	NO	NC	NO	NC	NO	NC	NO
125 VAC	5 A	5 A	10.1 A	10.1 A	1.5 A	0.7 A	3 A	3 A	2.5 A	1.3 A
250 VAC	3 A	3 A	10.1 A	10.1 A	1 A	0.5 A	2 A	2 A	1.5 A	0.8 A
8 VDC	5 A	5 A	10.1 A	10.1 A	2 A	2 A	5 A	4 A	3 A	3 A
14 VDC	5 A	5 A	10.1 A	10.1 A	2 A	2 A	4 A	4 A	3 A	3 A
30 VDC	4 A	4 A	4 A	4 A	2 A	2 A	3 A	3 A	3 A	3 A
125 VDC	0.4 A	0.4 A	0.4 A	0.4 A	0.05 A	0.05 A	0.4 A	0.4 A	0.05 A	0.05 A
250 VDC	0.2 A	0.2 A	0.2 A	0.2 A	0.03 A	0.03 A	0.2 A	0.2 A	0.03 A	0.03 A
Inrush current	20 A max. 10 A max. 20 A max. 15 A max. (both non-inductive and inductive loads)									

Note: 1. The above current ratings are the values of the steady-state current.
2. Inductive load has a power factor of 0.4 min. (AC) and a time constant of 7 milliseconds max. (DC). The inductive load applicable to the SS-10 series must have a power factor of 0.75 min.
3. Lamp load has an inrush current of 10 times the steady-state current.
4. Motor load has an inrush current of 6 times the steady-state current.
5. If the switch is used in a DC circuit and is subjected to inrush current or surge, connect a surge suppressor across the switch.

■ CONTACT RESISTANCE (mΩ max., initial)

	SS-01□	SS-5□	SS-10□
Contact rating:	0.1 A	3 A or 5 A	10.1 A
Normal operating force models (SS-□)	50 mΩ	30 mΩ	30 mΩ
Low operating force models (SS-□-F)	100 mΩ	50 mΩ	–
Super-low operating force models (SS-□-E)	150 mΩ	–	–
Lead wire models (all OF types)	100 mΩ	50 mΩ	–

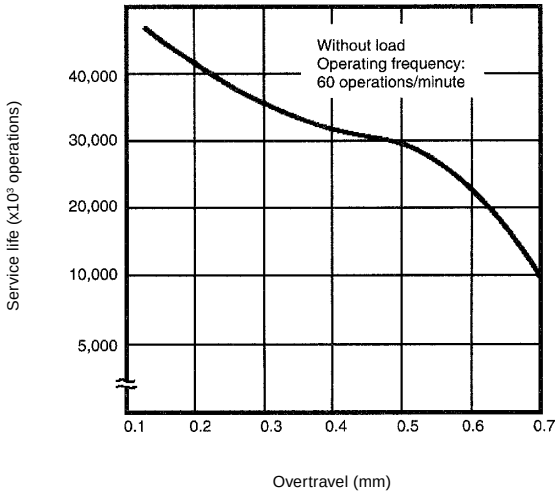
Characteristics

Switch type		General-purpose	
Operating speed (see note 3)		0.1 mm to 1 m/second (0.004 to 39.4 in/second)	
Operating frequency	Mechanical	400 operations per minute (pin plunger actuator type)	
	Electrical	60 operations per minute (pin plunger actuator type)	
Insulation resistance		100 MΩ at 500 VDC	
Dielectric strength	Crossbar contact type	600 VAC, 50/60 Hz for 1 minute (see note 1)	
	Others	1,000 VAC, 50/60 Hz for 1 minute between terminals of same polarity 1,500 VAC, 50/60 Hz for 1 minute between current-carrying parts and ground and between each terminal and noncurrent-carrying metal parts	
Vibration	Malfunction durability	10 to 55 Hz, 1.5 mm double amplitude	
Shock	Mechanical durability	Low-OF type	500 m/s² min. (approx. 50 g)
		Others	1,000 m/s² min. (approx. 100 g)
	Malfunction durability	Standard type	300 m/s² min. (approx. 30 g)
		Low-OF type	200 m/s² min. (approx. 20 g)
		Lever type at TTP	Contact gap, 1 ms max.
Ambient temperature	Operating	-25° to 85°C with no icing	
Humidity		85% RH max.	
Service life	Mechanical	30 million operations minimum (OT: rated value) (see note 4)	
	Electrical	200,000 operations minimum (rated load) (see note 2)	
Weight		Approx. 1.6 g pin plunger type	

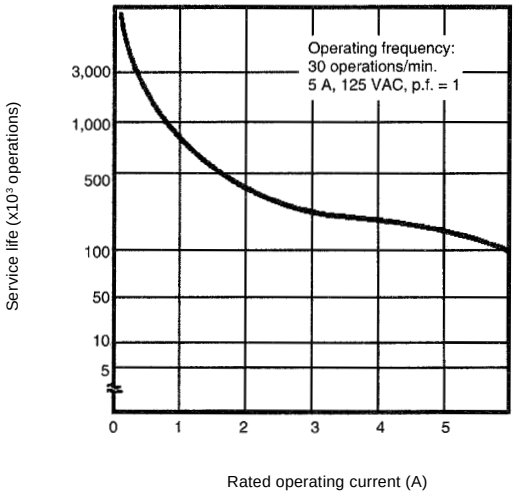
Note: 1. SS-10 series only.
2. 50,000 operations minimum for the SS-10 series.
3. Applies to the pin plunger type (at the pin plunger of the lever type).
4. 10 million operations for the SS-10 series.
5. Data shown are of initial value.

■ CHARACTERISTIC DATA

Mechanical service life
Standard type (SS-5, SS-10 series)



Electrical service life
Standard type (SS-5 series)

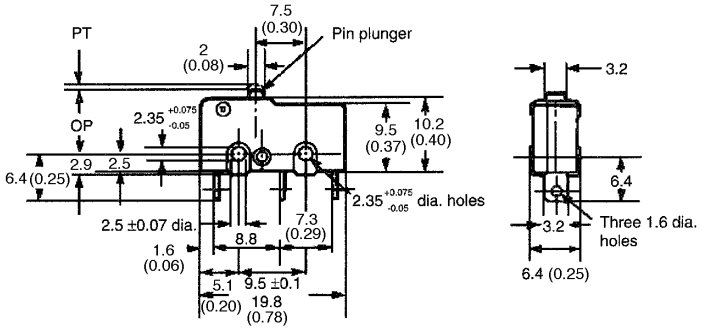


Dimensions

Unit: mm (inch)

■ STANDARD TYPE

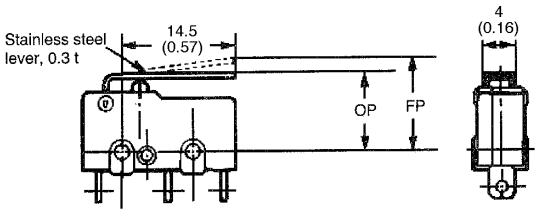
Pin plunger
SS-01 (-E, -F)
SS-5 (-F)
SS-10



Operating characteristics	Super-low force model SS-01-E	Low-force models SS-01-F SS-5-F	Standard models SS-01 SS-5	Standard model SS-10
OF max.	25 g	50 g	150 g	150 g
RF min.	2 g	4 g	25 g	25 g
PT max.	0.5 mm (0.020 in)	0.5 mm (0.020 in)	0.5 mm (0.020 in)	0.6 mm (0.024 in)
OT min.	0.5 mm (0.020 in)	0.5 mm (0.020 in)	0.5 mm (0.020 in)	0.4 mm (0.016 in)
MD max.	0.1 mm (0.004 in)	0.1 mm (0.004 in)	0.1 mm (0.004 in)	0.12 mm (0.005 in)
OP	8.4 ± 0.5 mm (0.331 ± 0.020 in)	8.4 ± 0.5 mm (0.331 ± 0.020 in)	8.4 ± 0.5 mm (0.331 ± 0.020 in)	8.4 ± 0.5 mm (0.331 ± 0.020 in)

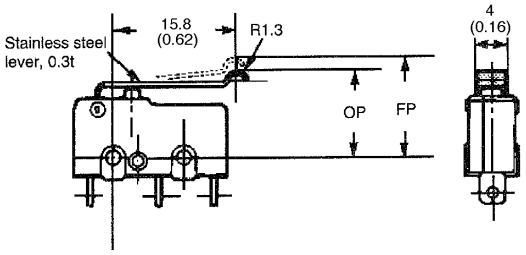
Note: 1. Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.
2. Straight vertical PCB terminal models are shown above. Soldered terminal, Tab (#10) terminal, lead wire terminal, PCB terminal parallel to left and PCB terminal parallel to right are shown in the Terminals section.

Hinge lever
SS-01GL (-E, -F)
SS-5GL (-F)
SS-10GL



Operating characteristics	Super-low force model SS-01GL-E	Low-force models SS-01GL-F SS-5GL-F	Standard models SS-01GL SS-5GL	Standard model SS-10GL
OF max.	8 g	16 g	50 g	50 g
RF min.	1 g	2 g	6 g	6 g
OT min.	1.2 mm (0.472 in)	1.2 mm (0.472 in)	1.2 mm (0.472 in)	1.0 mm (0.039 in)
MD max.	0.8 mm (0.032 in)	0.8 mm (0.032 in)	0.8 mm (0.032 in)	1.0 mm (0.039 in)
FP max.	13.6 mm (0.535 in)	13.6 mm (0.535 in)	13.6 mm (0.535 in)	13.6 mm (0.535 in)
OP	8.8 ± 0.8 mm (0.346 ± 0.032 in)	8.8 ± 0.8 mm (0.346 ± 0.032 in)	8.8 ± 0.8 mm (0.346 ± 0.032 in)	8.8 ± 0.8 mm (0.346 ± 0.032 in)

Simulated roller hinge lever
SS-01GL13 (-E, -F)
SS-5GL13 (-F)
SS-10GL13

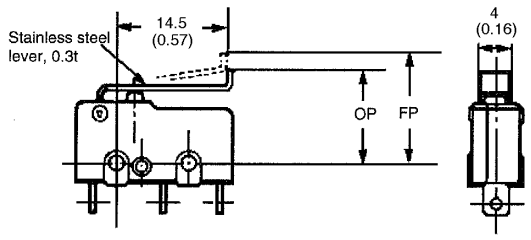


Operating characteristics	Super-low force model SS-01GL13-E	Low-force models SS-01GL13-F SS-5GL13-F	Standard models SS-01GL13 SS-5GL13	Standard model SS-10GL13
OF max.	8 g	16 g	50 g	50 g
RF min.	1 g	2 g	6 g	6 g
OT min.	1.2 mm (0.472 in)	1.2 mm (0.472 in)	1.2 mm (0.472 in)	1.0 mm (0.039 in)
MD max.	0.8 mm (0.032 in)	0.8 mm (0.032 in)	0.8 mm (0.032 in)	1.0 mm (0.039 in)
FP max.	15.5 mm (0.610 in)	15.5 mm (0.610 in)	15.5 mm (0.610 in)	15.5 mm (0.610 in)
OP	10.7 ± 0.8 mm (0.421 ± 0.032 in)	10.7 ± 0.8 mm (0.421 ± 0.032 in)	10.7 ± 0.8 mm (0.421 ± 0.032 in)	10.7 ± 0.8 mm (0.421 ± 0.032 in)

Note: 1. Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.
2. Straight vertical PCB terminal models are shown above. Soldered terminal, Tab (#10) terminal, lead wire terminal, PCB terminal parallel to left and PCB terminal parallel to right are shown in the Terminals section.

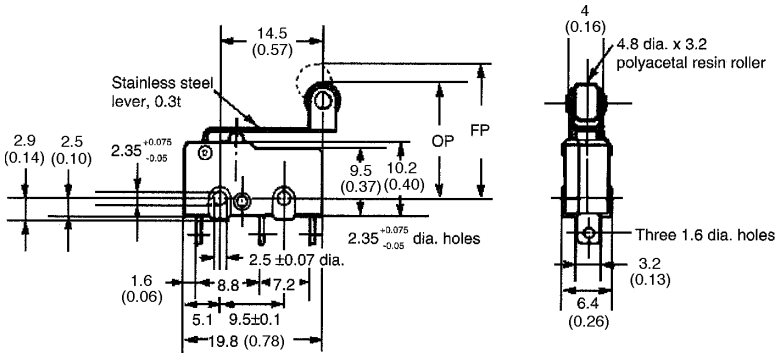
Unit: mm (inch)

Formed hinge lever
SS-01GL14 (-E, -F)
SS-5GL14 (-F)
SS-10GL14



Operating characteristics	Super-low force model SS-01GL14-E	Low-force models SS-01GL14-F SS-5GL14-F	Standard models SS-01GL14 SS-5GL14	Standard model SS-10GL14
OF max.	8 g	16 g	50 g	50 g
RF min.	1 g	2 g	6 g	6 g
OT min.	1.2 mm (0.472 in)	1.2 mm (0.472 in)	1.2 mm (0.472 in)	1.0 mm (0.039 in)
MD max.	0.8 mm (0.032 in)	0.8 mm (0.032 in)	0.8 mm (0.032 in)	1.0 mm (0.039 in)
FP max.	14.9 mm (0.587 in)	14.9 mm (0.587 in)	14.9 mm (0.587 in)	14.9 mm (0.587 in)
OP	10.1 ± 0.8 mm (0.398 ± 0.032 in)	10.1 ± 0.8 mm (0.398 ± 0.032 in)	10.1 ± 0.8 mm (0.398 ± 0.032 in)	10.1 ± 0.8 mm (0.398 ± 0.032 in)

Hinged roller lever
SS-01GL2 (-E, -F)
SS-5GL2 (-F)
SS-10GL2

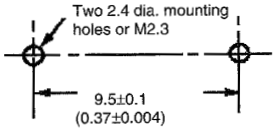


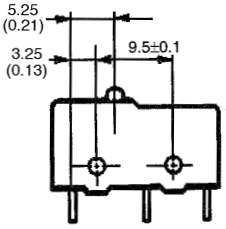
Operating characteristics	Super-low force model SS-01GL2-E	Low-force models SS-01GL2-F SS-5GL2-F	Standard models SS-01GL2 SS-5GL2	Standard model SS-10GL2
OF max.	8 g	16 g	50 g	50 g
RF min.	1 g	2 g	6 g	6 g
OT min.	1.2 mm (0.472 in)	1.2 mm (0.472 in)	1.2 mm (0.472 in)	1.0 mm (0.039 in)
MD max.	0.8 mm (0.032 in)	0.8 mm (0.032 in)	0.8 mm (0.032 in)	1.0 mm (0.039 in)
FP max.	19.3 mm (0.760 in)	19.3 mm (0.760 in)	19.3 mm (0.760 in)	19.3 mm (0.760 in)
OP	14.5 ± 0.8 mm (0.571 ± 0.032 in)	14.5 ± 0.8 mm (0.571 ± 0.032 in)	14.5 ± 0.8 mm (0.571 ± 0.032 in)	14.5 ± 0.8 mm (0.571 ± 0.032 in)

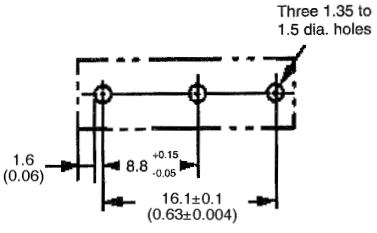
Note: Unless otherwise specified, a tolerance of ±0.4 mm applies to all dimensions.

■ MOUNTING HOLES

Standard types
Mounting holes below are for reference only.





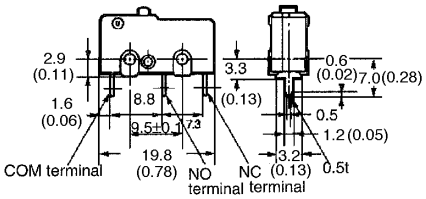


Note: Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

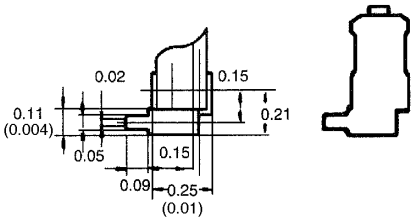
■ TERMINALS

General-purpose type

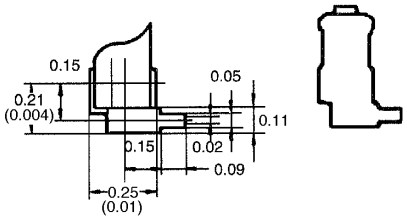
PCB terminal, straight vertical (D)



PCB terminal, parallel to left (D1)

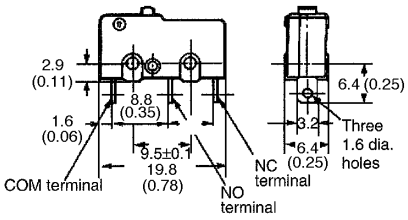


PCB terminal, parallel to right (D2)

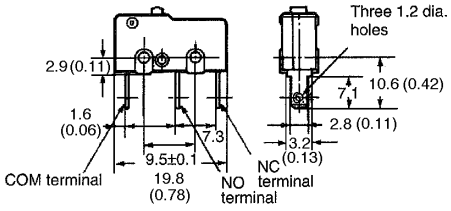


Note: Thickness of all the terminals is 0.5 mm.

Soldered terminal (blank)



Quick-connect tab (#110) terminal (T)



■ APPROVALS

UL (File No. E41515)/CSA (File No. LR21642)

Type		Rating
SS-10 series	General-purpose type	10.1 A, 250 VAC
SS-5 series	General-purpose type	5 A, 125 V, 3 A 250 VAC
SS-01 series	Super-low force type	0.1 A, 125 VAC, 30 VDC

VDE (File No. 5861-3221)

Type		Rating
SS-5 series	General-purpose type	5 A, 250 VAC

SEMKO (File Nos. 43-8614026/43-891609)

Type		Rating
SS-10 series	General-purpose type	10 A, 250 VAC
SS-5 series	General-purpose type	5 A, 250 VAC

Note: The rated values approved by each of the safety standards (e.g. UL, CSA) may be different from the performance characteristics individually defined in this catalog.

OMRON

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